SUMMARY OF METAL CONCENTRATIONS IN MECONIUM PRESENTED IN THE LITERATURE

Metal	Meconium Concentration (µg/g)													
	McDermott et al. (2019) [a]				Cassoulet et al. 2019*		MIREC (Arbuckle et al. 2016/ Ettinger et al. 2017)*			Aziz et al. 2017	Peng et al. 2015	Hamzaoglu 2014	Turker et al. 2013	Yang et al. 2013
	n=15		*n=17*		*n=371*		*n=1,591*			*n=309*	*n=190*	*n=18*	*n=304*	*n=102*
	Butte, MT Median		Columbia, SC Median		Median	Range	Median	95th %tile	Maximum	Mean Range by Location (dry wt.)	Control, Median (dry wt.)	Non-industrial district, Median	Surviving, Median [c]	Range
	as wet weight	as dry weight [b]	as wet weight	as dry weight [b]										
Arsenic	0.032	0.11	<LOD	<LOD	0.123	ND - 0.72	NC	0.02	0.55	---	0.03778	0.07	---	[e]
Copper	26.311	88	0.01468	0.049	67.18	15 - 250	---	---	---	1.6 - 28.7	---	67.05	99.77	---
Manganese	5.364	18	0.00325	0.011	14.31	1 - 100	4.9	15	40	---	---	---	---	---
Molybdenum	0.059	0.20	<LOD	<LOD	---	---	---	---	---	---	---	---	---	---
Lead	NC (0.005+)	NC (0.017+)	<LOD	<LOD	0.022	ND - 0.35	NC	0.0085	0.48	1.2 - 14.4	0.13568	0.041	30.84	[e]
Zinc	81.642	272	0.04334	0.14	313.8	20 - 1,500	---	---	---	9.5 - 160.3	---	244.5	190.44	---

Metal	Meconium Concentration (µg/g)														
	McDermott et al. (2019) [a]				Vall et al. 2012		Turker et al. 2006	Lall et al. 2005	Ostrea et al. 2002	Golamco et al. (2000)	Haram-Mourabet 1998	Gonzalez de Dios 1996	Baranowski 1996	Friel 1989	Kopito 1966
	n=15		*n=17*		*n=37*		*n=117*	*n=15*	*n=426*	*n=26*	*n=34*	*n=38*	*n=26*	*n=27*	*n=65*
	Butte, MT Median		Columbia, SC Median		Median (dry wt.)	95th %tile (dry wt.)	Median	AGA Newborns, Mean (dry wt.)	Median	Range of means, >36wks (dry wt.)	Mean Range by Gestational Age	Full-term, Mean (Table III)	Control Mean	Mean, full-term [d]	Control Mean
	as wet weight	as dry weight [b]	as wet weight	as dry weight [b]											
Arsenic	0.032	0.11	<LOD	<LOD	0.0056	0.0255	---	---	<LOD	---	---	---	---	---	---
Copper	26.311	88	0.01468	0.049	---	---	116.8	115.8	---	79.7 - 93.6	90.3 - 154.2	36.4	15.2	27.5	64
Manganese	5.364	18	0.00325	0.011	---	---	---	40.2	---	24.7 - 25.4	9.5 - 35.8	4.1	---	7.0	20
Molybdenum	0.059	0.20	<LOD	<LOD	---	---	---	---	---	---	---	0.145	---	---	---
Lead	NC (0.005+)	NC (0.017+)	<LOD	<LOD	---	---	46.5	---	[f]	---	---	0.289	0.0047	---	---
Zinc	81.642	272	0.04334	0.14	---	---	234	482.8	---	456.1 - 667.7	156.4 - 365.4	76	68	107.5	230

NC = not calculated due to infrequent detection

<LOD = all samples less than limit of detection

+Median not available as only 1 sample was detect; detected concentration is reported.

*Weight basis of reported concentrations not specified

[a] McDermott et al. concentrations reported in Table 1 were converted from ug/kg (ppb) to ug/g (ppm)

[b] McDermott et al. concentrations adjusted from wet weight to dry weight assuming a moisture content of 70% [dw = ww / (1 - 0.7)]

[c] Results reported in terms of infant body weight; adjusted based on the median body weight (2.070 kg).
Concentrations also adjusted to reflect corrected units based on personal communication from G. Turker to C. Partridge in January 2, 2020 email.

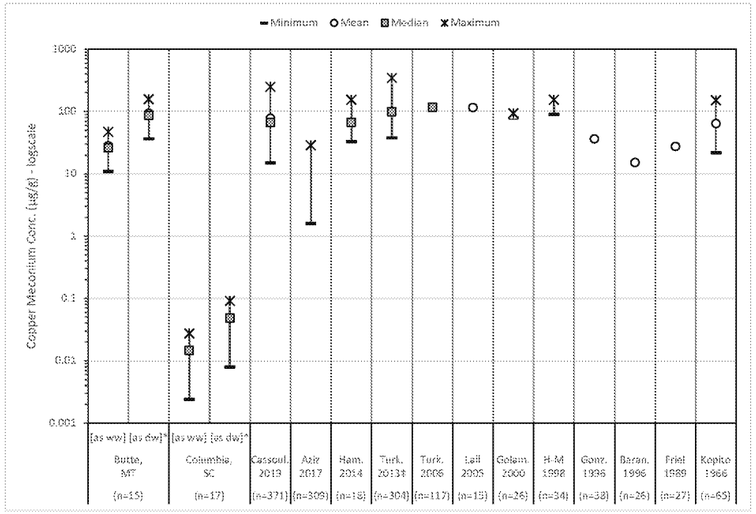
[d] Results reported in terms of total metal (expressed as concentration assuming the mean reported mass of stool 8.9 g)

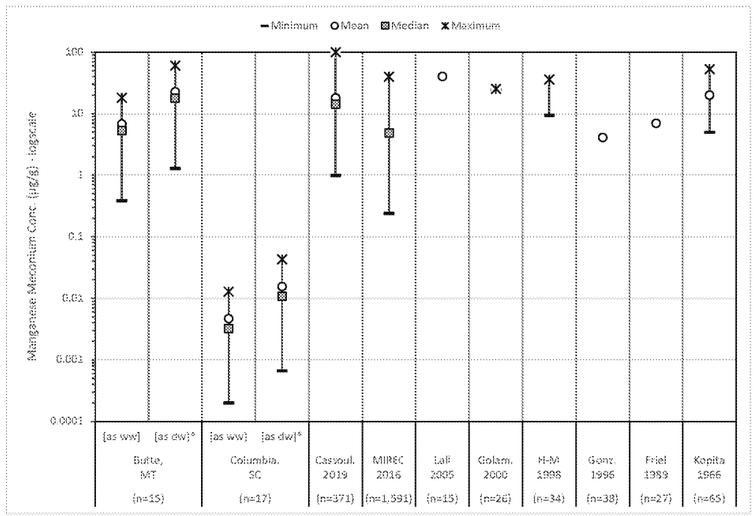
[e] Units reported as "ppb", but unclear if expressed in terms of mass of meconium or volume of extract

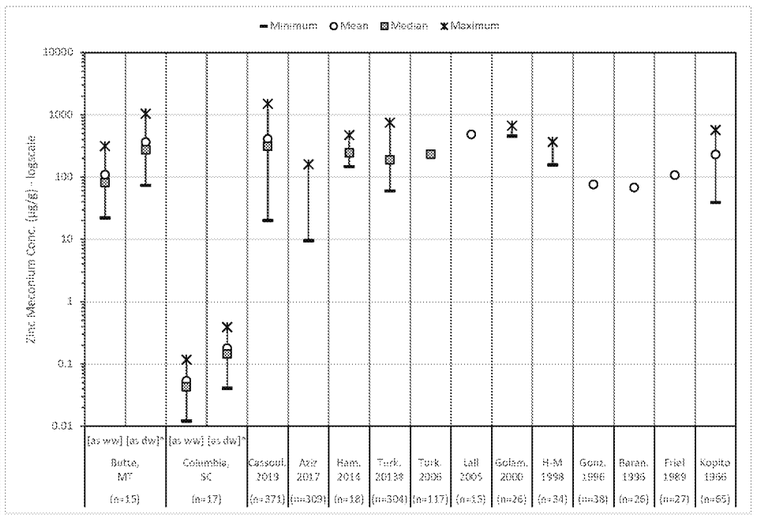
[f] Results reported as ug/mL; would need to be converted to ug/g based on sample preparation information

SUMMARY OF METAL CONCENTRATIONS IN MECONIUM PRESENTED IN THE LITERATURE

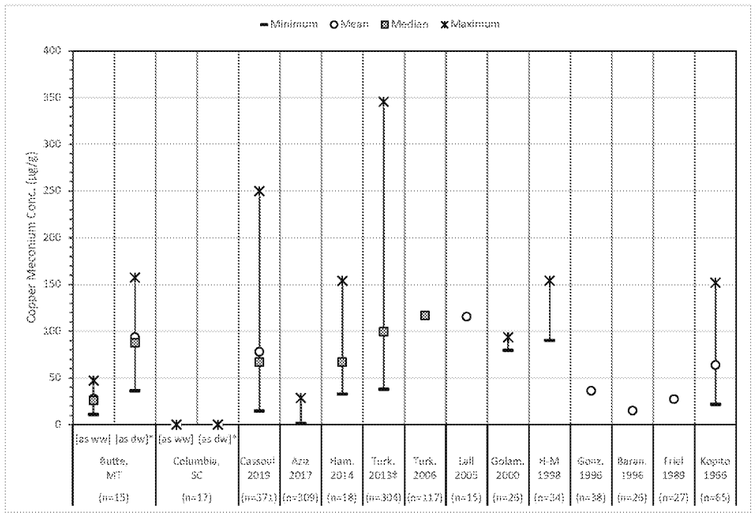
LOG-SCALE

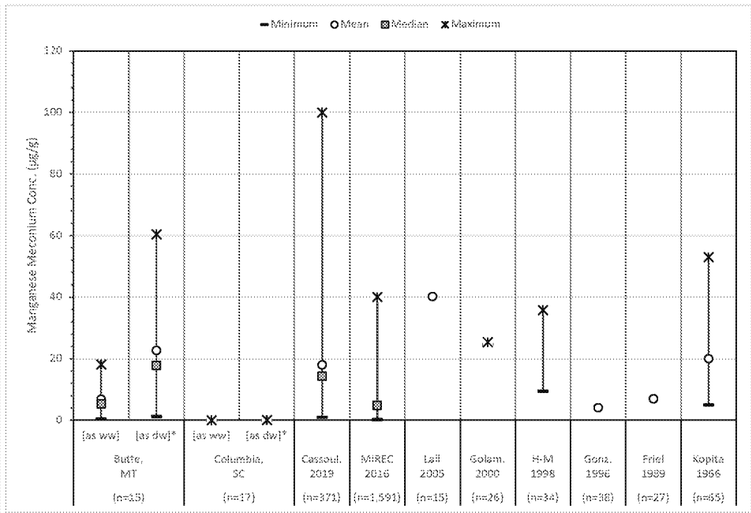


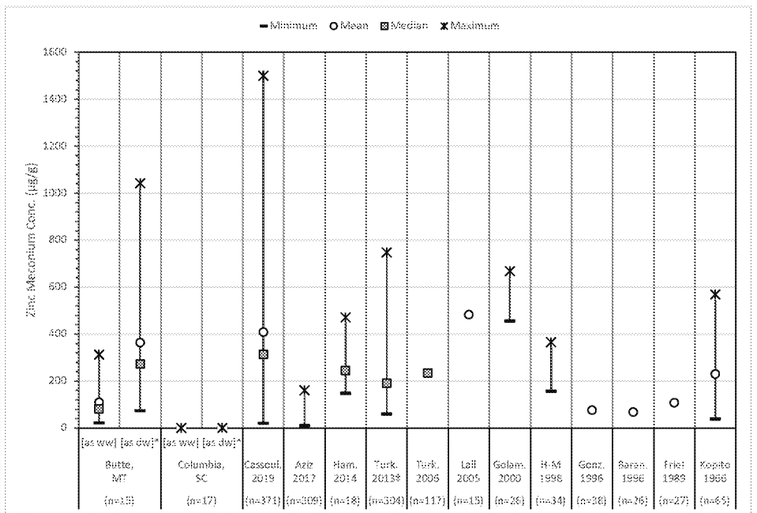




LINEAR SCALE







*McDermott concentrations adjusted from wet weight to dry weight assuming a moisture content of 70% [dw = ww / (1 - 0.7)]

‡Concentrations adjusted to reflect corrected units based on personal communication from G. Turker to C. Partridge in January 2, 2020 email.

All other values are as reported in the original citation; no adjustments for wet/dry weight have been made.

--> Butte, MT meconium concentrations appear to be within the observed range based on scientific literature

--> Columbia, SC meconium concentrations appear uncharacteristically low based on scientific literature

--> There are no established reference levels for metals in meconium; no data to establish health effects/toxicity relationships